

# ASME A90.1 BELT MANLIFTS TESTS AND INSPECTIONS

## 8. Tests and Inspections

8.1. The same series of tests as outlined in this paragraph shall be performed by the owner on an annual basis.

8.1.1. **Up Capacity.** The manlift with 200 lb. (90 kg mass) on each horizontal step of the up-run shall show no appreciable slip of the belt when standing or running at rated speed.

8.1.2. **Down Capacity-Brake.** The manlift with 200 lb. (90 kg mass) on each horizontal step of the down-run shall show no appreciable slip of the belt when standing or running at rated speed. The brake shall stop and hold the belt with test load within a maximum of 24-in. (610 mm) of travel.

8.1.3. **Loaded Step Deflection.** Each step shall be subjected to a 400 lb. (180 kg mass) load applied to its center while the machine is stationary. The guide rails shall not be displaced and there shall be no visible deformation, deflection, or misalignment of the step of its support during the test.

8.1.4. **Strength of Handhold.** Each handhold shall support a load of 300 lb. (135 kg mass) without appreciable deformation of injury to its fastenings. The test shall be performed while the machine is stationary.

8.1.5. **Safety Stops.** The split-rail safety stops or in-track equivalent safety stops shall be tested by placing a weight of 50 lb (925 kg) on the approximate center of the step or platform and running the manlift in the appropriate direction and the manlift is stopped by the safety stop. Each safety stop shall be tested individually. All other safety stops shall be manually tested.

8.1.6. **Start/Stop Control Rope.** The manlift shall be started and stopped on both the up and down runs by means of the start/stop control rope.

8.1.7. **Movable Cone Guards.** If such guards are installed, each one shall be tested by applying a force of not more than 2 lb (9 N) on the edge of the guard nearest the hinge.

8.1.8. **Speed Tests.** Speed tests shall be taken and checked against specified (rated) speed. The rated speed shall not be exceeded by more than 10% when the manlift is running empty.

Note: Speed may be determined by a revolution counter on the top (head) pulley where the revolutions per minute are multiplied by D, where D is the diameter in feet, or may be determined with a tachometer with a 6 in. (150 mm) or 12 in. (305 mm) circumference wheel running in contact with the belt. Readings taken with a 6 in. 9150 mm) wheel circumference

should be divided by 2. For speed values in meters per second, the following conversion factor may be useful.

$$1 \text{ ft/min} = 0.00508 \text{ m/sec}$$

8.1.9. **Emergency Brake.** The emergency brake, if installed, shall be tested per manufacturer's procedure.

## 8.2. Periodic Inspection

8.2.1. **Frequency.** All manlifts shall be inspected by a competent, designated person at intervals of not more than 30 days. Safety stops and rope control shall be checked weekly. Manlifts found to be unsafe shall not be operated until properly repaired.

8.2.2. **Items Covered.** This periodic inspection shall cover, but is not limited to, the following items:

- a) Bearings
- b) Belt and belt splice [cuts, damage, tracking at top and bottom]
- c) Bottom pulley and clearance
- d) Bottom pulley take-up
- e) Brake
- f) Drive coupling
- g) Driving mechanism
- h) Electrical switches
- i) Floor braces
- j) Floor landing condition
- k) Guide rail supports and fastenings
- l) Guide rail track
- m) Guardrails
- n) Hoods
- o) Handhold and fastenings
- p) Illumination
- q) Lubrication
- r) Motor
- s) Motor coupling
- t) Pulley lagging
- u) Pulley supports
- v) Rollers and slides
- w) Safety stops
- x) Skip on up or down run when mounting steps
- y) Start/stop control rope
- z) Steps
- aa) Step clearance at top & bottom landings
- bb) Step fastenings
- cc) Top pulley
- dd) Vibration & misalignment
- ee) Warning signs and lights

8.2.4. **Unsafe Use.** The individual making the inspection shall also make a special point to observe which persons are using the manlift and whether they are complying with the operating rules listed in Section 7. The inspecting individual shall immediately report any unsafe acts or unauthorized use to proper personnel.

8.2.4. **Inspection Log.** A written inspection log shall be kept of findings at each inspection and be signed and dated. Records of inspection shall be made available to duly authorized agencies. (See check list on reverse side).